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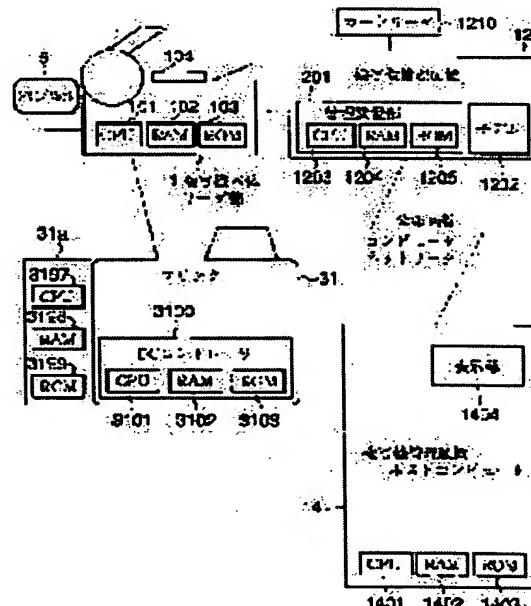
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## (54) COPYING MACHINE CONTROL DEVICE, COPYING MACHINE AND THEIR CONTROL METHOD

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To give a warning before attaining an upper limited value in the case of controlling a counter for copying.

**SOLUTION:** When this copying machine control device 12 receives information that paper is ejected from a copying machine main body 1, it adds '1' to the copy counter, and successively compares a counter value with the upper limited value in use, a 2nd warning threshold and a 1st warning threshold. When the counter value is larger than the upper limited value, the copying enable signal of the copying machine 1 is made to fall, and when the counter value is larger than the 2nd or the 1st warning threshold, the copying machine 1 is informed of that effect. The copying machine informed of it displays the warning corresponding to the information and is urged to change a copying mode to the copying mode in which a usage charge is saved.



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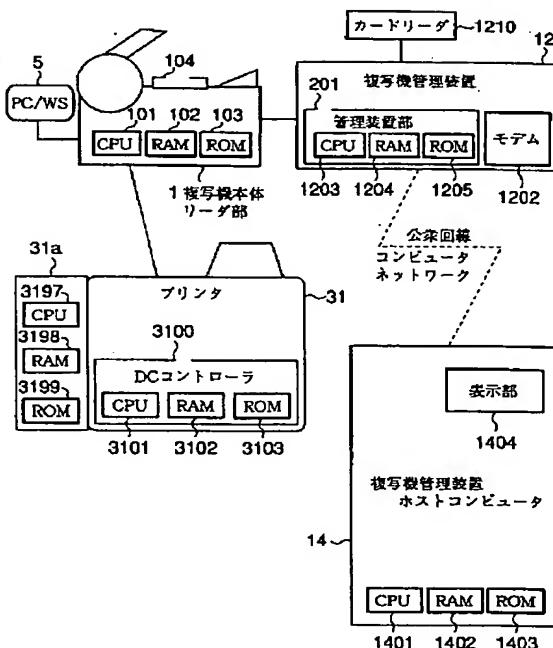
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(54)【発明の名称】複写機管理装置及び複写機及びそれらの制御方法

(57)【要約】

【課題】コピーのカウンタ管理を行う際、上限値に達する前に警告を行う。

【解決手段】複写機管理装置12は、複写機本体1から用紙を排出した旨の通知を受けると、コピーカウンタに1加算し、その値と使用上限値、第2の警告閾値、第1の警告閾値と順次比較する。上限値よりもカウンタ値の方が大きければ、複写機1のコピーインエーブル信号を落とし、第2あるいは第1の警告閾値よりもカウンタ値の方が大きければ、複写機1に対してその旨通知する。通知を受けた複写機は、通知に対応する警告を表示すると共に、使用料金を節約できるコピー modeへの変更を促す。



前記複写機管理装置から所定の通知を受信する受信工程のプログラムコードと、

前記受信工程により前記所定の通知を受信した場合、その旨出力すると共に、現在のコピーモードよりも複写に要する金額の低いコピーモードへの変更を促す画面を表示する表示工程のプログラムコードとを備えることを特徴とする記憶媒体。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、たとえば複写機のように、使用量に応じて料金を課金される装置において、料金を管理して、必要に応じて利用者に警告を発する複写機管理装置及び複写機及びそれらの制御方法に関する。

【0002】

【従来の技術】従来、管理センタにおけるホストコンピュータと複写機とを接続して複写機の状態を管理する複写機管理システムがあった。このようなシステムにおいては、複写機本体のROMバージョン等の状態情報の収集をホストコンピュータから行う。また複写機は、ホストコンピュータから要求があったカウンタ情報をわち課金情報をホストコンピュータへと送信し、ホストコンピュータにおいてはカウンタ情報に基づいて料金の計算や請求書の発行といった業務が行われる。また、複写機においてジャムやサービスマンエラーが発生した場合にはそれぞれの詳細な内容をホストコンピュータへと送り、必要に応じた対策を講じることが可能となっている。

【0003】このような複写機管理システムにおいては、さらに、複数の複写機をそれらが属する部門に分け、部門毎のコピーカウンタの集計を行うことで、部門毎の複写機の管理を実現している。部門毎の複写機の管理を行う場合には、部門ごとに料金の上限金額を設定しておき、その金額に達した部門については、その部門に属する複写機の利用を禁止にする料金管理サービスを行ってきた。

【0004】

【発明が解決しようとする課題】しかし、料金管理前記サービスにおいては、予算を越えないように管理する点においては優れているものの、上限金額到達時に複写機の利用を禁止する為に、新たな予算が割り当てられるまで、必要なコピーが出来ない場合がある。

【0005】また上限金額に近づいていることを管理センタからユーザーに知らせることはできても、それに対してはユーザー自身が対策をしなければならなかった。すなわち、複写機の利用においては、カラー複写機であっても白黒コピーを行ったり、あるいは複数の原稿を縮小して1枚の用紙に複写するなど、料金を節約する手法があるが、上限金額に近付いていることを通知されたユーザーが、このような節約の方法をとって複写機を有効利用す

るといった対策を取るためには、ユーザー自身が複写機の設定を変えなければならなかった。

【0006】本発明は上記従来例に鑑みて成されたもので、使用料金が予算の上限金額に近付いた場合にその旨ユーザーに警告すると共に、料金を節減できるモードへのモードの設定を促すことで、複写機を有効に利用できる複写機管理装置及び複写機及びそれらの制御方法を提供することを目的とする。

【0007】

10 【課題を解決するための手段】上記目的を達成するためには本発明は次のような構成からなる。

【0008】複写機を管理する複写機管理装置であって、

複写機から、複写に要する金額を算出可能な課金情報を受信して積算する積算手段と、

上限値と少なくともひとつの閾値とを設定する設定手段と、

前記上限値及び前記閾値と前記積算された課金情報とを比較する比較手段と、

20 前記課金情報に対応する金額が前記上限値に対応する金額を超えている場合には、前記複写機を使用不能とし、前記課金情報に対応する金額が前記閾値に対応する金額を超えている場合には、前記複写機に対してその旨通知する通知手段とを備える。

【0009】さらに好ましくは、前記設定手段は、前記閾値として第1及び第2のふたつの閾値を設定する。

【0010】さらに好ましくは、前記複写機は複数あり、前記積算手段は、複数の複写機すべてについての課金情報の合計を積算し、前記通知手段は、複数の複写機すべてを対象とする。

【0011】あるいは、複写機管理装置に接続され、複数のコピーモードで動作可能な複写機であって、前記複写機管理装置から、所定の通知を受信する受信手段と、前記受信手段により前記所定の通知を受信した場合、その旨出力すると共に、現在のコピーモードよりも複写に要する金額の低いコピーモードへの変更を促す画面を表示する表示手段とを備える。

【0012】さらに好ましくは、前記複写機管理装置に対して複写に要する金額の算出可能な課金情報を送信する送信手段を更に備え、前記所定の通知は、前記課金情報が所定の閾値を越えた場合に発行される。

【0013】さらに好ましくは、前記所定の通知は、前記課金情報が所定の複数の閾値を越えた場合にそれぞれ発行され、前記表示手段は、前記通知を受信した旨を出力すると共に、現在のコピーモードよりも複写に要する金額の低いコピーモードへの変更を促す画面を表示する。

【0014】さらに好ましくは、前記所定の通知は、前記課金情報が所定の複数の閾値を越えた場合にそれぞれ発行され、前記表示手段は、前記通知を受信した旨を出

れたモードに応じて出力枚数をカウントする。白黒複写機であれば、課金は印刷枚数に応じて行えばよいので、カウンタはひとつでよい。これらのカウンタは、料金の精算によって0にリセットされる。積算枚数を数える場合には、このカウンタ値を、リセット直前に積算用に別途設けたカウンタに加算しておく。

【0033】また、カウンタ値は、警告閾値や上限値と同様に、管理者が管理者用カードまたは管理者用暗証番号において任意にクリアすることも可能である。

【0034】複写機管理装置ホストコンピュータ14は、CPU1401、RAM1402、ROM1403、CRT、LCD等の表示部1404を備え、複写機管理装置12から転送される各種情報を表示部1404に表示することができる。

【0035】CPU1401は、ROM1403に格納されるプログラムに基づいて複写機管理装置ホストコンピュータ14を制御し、複写機管理装置12からの受信情報を表示部1404に表示することができる。RAM1402はCPU1401の作業領域である。

【0036】次に複写機管理装置12の動作を説明する。

【0037】図2のフローチャートで示されるように、複写機管理装置12に接続されたカードリーダ1210に部門別管理カードを挿入してコピーを行った場合、もしくは部門別の暗証番号を入力してコピー可能状態にしコピーを行った場合、複写機本体から画像形成された用紙が排紙されると(2001)、対応する部門のカウンターを1増加させる(2002)。次に前記カウンターの値を、後述する警告閾値1及び警告閾値2より大きく設定された上限値と比較する(2003)。カウンタ値が上限値より大きい場合には、コピーイネーブル信号を落とし(2004)、複写機本体でのコピー出力を不可能となるようする。なお、管理対象となる部門の複写機が複数台ある場合には、ステップS2003で比較するカウンタ値は、管理対象となる複写機のカウンタ値の合計となる。

【0038】ただし、管理対象の部門として登録されたすべての複写機が白黒複写機であればこれでもよいが、カラー複写機が混在している場合、白黒コピーとカラーコピーの単価の相違から、単純にカウンタ値をもって料金に代えることはできない。したがって、カラー複写機が混在する環境にあっては、白黒およびカラーそれぞれのカウンタ値に単価に応じた重みを乗じ、それを加算してカウンタ値に代えるものとする。この値は課金される金額そのものであっても良い。また、この場合には、比較の対象となる閾値も単に上限枚数が指定されるのではなく、白黒およびカラーそれぞれの単価に応じた重みを考慮した上で決定される。カウンタ値として課金金額が用いられる場合には、閾値も閾値となる金額を指定すればよい。

【0039】また、コピーイネーブル信号は、部門として管理される複写機が複数台ある場合には、すべての複写機について落とされる。

【0040】上限値よりもカウンタ値が小さい場合には、カウンターの値を、警告閾値1より大きく、上限より小さい警告閾値2と比較し(2005)、カウンタ値が警告閾値2以上であるならば複写機管理装置は、部門として管理されているすべての複写機本体に警告閾値2を超えたことを示す第2の通知を送る(2006)。

【0041】カウンタ値が警告閾値2よりも小さい場合には、カウンタ値と警告閾値1とを比較し(2007)、カウンタ値が警告閾値1より大きいならば複写機管理装置12は複写機本体に警告閾値1を超えたことを示す第1の通知を送る(2008)。

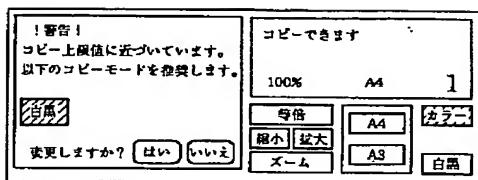
【0042】以上の手順により、カウンタ値あるいは課金金額を、上限値>警告閾値2>警告閾値1のように設けられたそれぞれの閾値と比較し、上限値を超えていれば管理下にある複写機をコピー不能状態にし、警告閾値1あるいは2を越えていれば、それに対応した通知を複写機に送る。

【0043】複写機管理装置12から第1あるいは第2の通知を受信した複写機本体は、図5の手順で動作する。複写機本体1においては、複写機管理装置12より受けた通知を判定し(501)、警告閾値1を超えたことを示す第1の通知を受けた場合は、第1の通知を受けたことを示す第1の警告と、次回のコピージョブ設定時に予め設定された経費節減の為のコピーモード設定画面を表示し(502)、ユーザーにそのコピーモードを推奨する。例えば図3で示されるように、ユーザーがフルカラーのコピーモード設定をしたときに、既にカウンターが警告閾値1を超えていたならば、カウンター料金がより安価なモノクロのコピーモード設定に変更するようユーザーに促す。

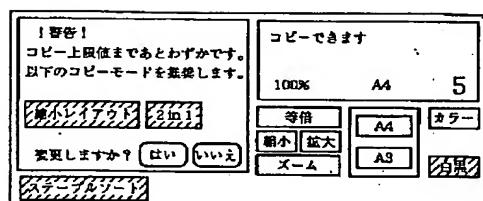
【0044】複写機管理装置12より受信した通知が、警告閾値2を超えたことを示す第2の通知であれば、第2の通知を受けたことを示す第2の警告と、次回のコピージョブ設定時に、警告閾値1の通知時とは異なる予め設定された経費節減の為のコピーモード設定画面を表示し(503)、ユーザーにそのコピーモードを推奨する。例えば図4で示されるように、ユーザーが複数原稿、モノクロ、置数5枚、ステープルソートのコピーモード設定をしたときに、既にカウンターが警告閾値2を超えていたならば、コピーモード設定として原稿2枚を1ページに縮小レイアウトする2 in 1モードをユーザーに変更するようユーザーに促す。

【0045】第1あるいは第2の通知を受信した複写機は、それぞれの警告の表示については、どのような複写機であっても行うが、推奨するコピーモードについては、各複写機の備える機能に応じて異なる。たとえばカラー複写機であれば、図3及び図4に示したような推奨

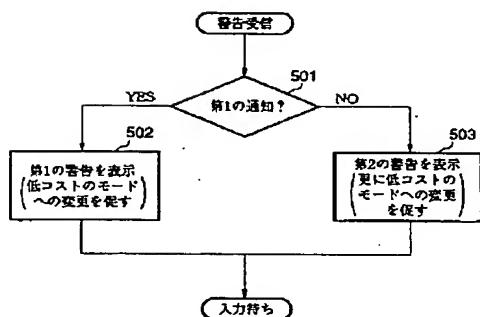
【図3】



【図4】



【図5】



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**CLAIMS**

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**[Claim(s)]**

**[Claim 1]** An addition means to be copying machine management equipment which manages a copying machine, and to receive and integrate the accounting information which can compute the amount of money which a copy takes from a copying machine, A comparison means to compare a setting-out means to set up a upper limit and at least one threshold with said upper limit and said threshold, and said integrated accounting information, When the amount of money corresponding to said accounting information is over the amount of money corresponding to said upper limit Copying machine management equipment characterized by having an advice means to notify that to said copying machine when it presupposes that it is impossible using said copying machine and the amount of money corresponding to said accounting information is over the amount of money corresponding to said threshold limit value.

**[Claim 2]** Said setting-out means is copying machine management equipment according to claim 1 characterized by setting up two thresholds, the 1st and the 2nd, as said threshold.

**[Claim 3]** It is copying machine management equipment according to claim 1 or 2 which, as for those with two or more, and said addition means, said copying machine integrates the sum total of the accounting information about two or more copying machines of all, and is characterized by targetting two or more copying machines of all for said advice means.

**[Claim 4]** The copying machine which carries out [ having a display means display the screen to which modification to copy mode with the amount of money lower than current copy mode when a receiving means receive predetermined advice, and said receiving means receive said predetermined advice from said copying machine management equipment, while it connects with copying machine management equipment, it is the copying machine which can operate in two or more copy modes, and outputting that which a copy takes urges, and ] as the description.

**[Claim 5]** It is the copying machine according to claim 4 which is further equipped with a transmitting means to transmit the accounting information which can compute the amount of money which a copy takes to said copying machine management equipment, and is characterized by publishing said predetermined advice when said accounting information exceeds a predetermined threshold.

**[Claim 6]** It is the copying machine according to claim 4 or 5 which said predetermined advice is published, respectively when said accounting information exceeds two or more predetermined thresholds, and is characterized by said display means displaying the

screen to which modification to copy mode with the amount of money lower than current copy mode while outputting the purport that said advice was received which a copy takes is urged.

[Claim 7] It is the copying machine according to claim 6 which said predetermined advice is published, respectively when said accounting information exceeds two or more predetermined thresholds, and is characterized by said display means displaying the screen to which modification to the copy mode with the amount of money lower than current copy mode which a copy takes at every reception is urged while outputting the purport that said advice was received.

[Claim 8] Said display means is a copying machine given in claim 4 characterized by displaying the screen to which modification to copy mode with the amount of money lower than current copy mode while outputting the purport that said advice was received whenever directions of copy actuation were given by the user which a copy takes is urged thru/or any 1 term of 7.

[Claim 9] The copying machine managerial system characterized by coming to connect copying machine management equipment given in claim 1 thru/or any 1 term of 3, and a copying machine given in claim 4 thru/or any 1 term of 8.

[Claim 10] The addition process which is the copying machine management method which manages a copying machine, and receives and integrates the accounting information which can compute the amount of money which a copy takes from a copying machine, The comparison process which compares the setting-out process which sets up a upper limit and at least one threshold with said upper limit and said threshold, and said integrated accounting information, When the amount of money corresponding to said accounting information is over the amount of money corresponding to said upper limit The copying machine management method characterized by having the advice process which notifies that to said copying machine when it presupposes that it is impossible using said copying machine and the amount of money corresponding to said accounting information is over the amount of money corresponding to said threshold limit value.

[Claim 11] The copying machine control approach of carrying out having the display process which displays the screen to which modification to copy mode with the amount of money low than current copy mode when the receiving process which is connected to copying machine management equipment, is the control approach of a copying machine that it can operate in two or more copy modes, and receives predetermined advice from said copying machine management equipment, and said receiving process receive said predetermined advice, while outputting that which a copy takes urges as the description.

[Claim 12] It is the computer-readable storage which stores the computer program for managing a copying machine by computer. The program code of the addition process which receives and integrates the accounting information which can compute the amount of money which a copy takes from a copying machine, The program code of the setting-out process which sets up a upper limit and at least one threshold, When the program code of the comparison process which compares said upper limit and said threshold, and said integrated accounting information, and the amount of money corresponding to said accounting information are over the amount of money corresponding to said upper limit The storage characterized by having the program code of the advice process which notifies

that to said copying machine when it presupposes that it is impossible using said copying machine and the amount of money corresponding to said accounting information is over the amount of money corresponding to said threshold limit value.

[Claim 13] It is the computer-readable storage which stores the computer program which is connected to copying machine management equipment and controls the copying machine which can operate in two or more copy modes. The program code of the receiving process which receives predetermined advice from said copying machine management equipment, when said receiving process receives said predetermined advice, while outputting that The storage characterized by having the program code of the display process which displays the screen to which modification to copy mode with the amount of money lower than current copy mode which a copy takes is urged.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] Like a copying machine, this invention manages a tariff in the equipment charged in a tariff according to the amount used, and relates to the copying machine management equipment which emits warning to a user if needed, copying machines, and those control approaches.

[0002]

[Description of the Prior Art] Conventionally, there was a copying machine managerial system which connects the host computer and copying machine in a management center, and manages the condition of a copying machine. In such a system, status information, such as a ROM version of the body of a copying machine, is collected from a host computer. Moreover, a copying machine transmits to a host computer, the counter information, i.e., the accounting information, which had a demand from the host computer, and operation, such as count of a tariff and issuance of a bill, is performed based on counter information in a host computer. Moreover, when a jam and a serviceman error occur in a copying machine, it is possible to take the cure [ by each detailed content ] to a host computer delivery and if needed.

[0003] In such a copying machine managerial system, further two or more copying machines were divided into the category into which they belong, it is totaling the copy counter for every category, and management of the copying machine for every category is realized. In managing the copying machine for every category, the upper limit amount of a tariff was set up for every category, and it has performed the tariff management service which carries out utilization of the copying machine belonging to the category to prohibition about the category which reached the amount of money.

[0004]

[Problem(s) to be Solved by the Invention] However, in the tariff management aforementioned service, a required copy may not be made until a new budget is assigned in order to forbid utilization of a copying machine at the time of upper limit amount of money attainment although it excels in the point managed so that a budget may not be exceeded.

[0005] Moreover, even if it could tell the user about approaching the upper limit amount of money from the management center, the user itself had to cope with it. That is, in utilization of a copying machine, even if it was a color copying machine, performing monochrome copy, or reducing two or more manuscripts and copying in the form of one sheet etc. had the technique of saving a tariff, but in order to take the measures that the user notified of approaching the upper limit amount of money takes the approach of such economization, and uses a copying machine effectively, the user itself had to change setting out of a copying machine.

[0006] This invention is urging setting out in the mode to the mode a tariff's being reducible, while warning a user of that, when it accomplishes in view of the above-mentioned conventional example and a toll's approaches the upper limit amount of money of a budget, and it aims at offering the copying machine management equipment which can use a copying machine effectively, copying machines, and those control approaches.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned object, this invention consists of the following configurations.

[0008] An addition means to be copying machine management equipment which manages a copying machine, and to receive and integrate the accounting information which can compute the amount of money which a copy takes from a copying machine, A comparison means to compare a setting-out means to set up a upper limit and at least one threshold with said upper limit and said threshold, and said integrated accounting information, When it presupposes that it is impossible using said copying machine when the amount of money corresponding to said accounting information is over the amount of money corresponding to said upper limit, and the amount of money corresponding to said accounting information is over the amount of money corresponding to said threshold limit value, it has an advice means to notify that to said copying machine.

[0009] Said setting-out means sets up two thresholds, the 1st and the 2nd, as said threshold still more preferably.

[0010] Still more preferably, as for said copying machine, those with two or more and said addition means integrate the sum total of the accounting information about two or more copying machines of all, and two or more copying machines of all are targetted for said advice means.

[0011] Or it connects with copying machine management equipment, it is the copying machine which can operate in two or more copy modes, and when a receiving means to receive predetermined advice, and said receiving means receive said predetermined advice from said copying machine management equipment, while outputting that, it has a display means to display the screen to which modification to copy mode with the amount of money lower than current copy mode which a copy takes is urged.

[0012] It has further a transmitting means to transmit the accounting information which can compute still more preferably the amount of money which a copy takes to said copying machine management equipment, and said predetermined advice is published when said accounting information exceeds a predetermined threshold.

[0013] Still more preferably, said predetermined advice is published, respectively, when

said accounting information exceeds two or more predetermined thresholds, and said display means displays the screen to which modification to copy mode with the amount of money lower than current copy mode which a copy takes is urged while outputting the purport that said advice was received.

[0014] Still more preferably, said predetermined advice is published, respectively, when said accounting information exceeds two or more predetermined thresholds, and said display means displays the screen to which modification to copy mode with the amount of money lower than current copy mode which a copy takes is urged at every reception while outputting the purport that said advice was received.

[0015] Still more preferably, said display means displays the screen to which modification to copy mode with the amount of money lower than current copy mode which a copy takes is urged while outputting the purport that said advice was received whenever directions of copy actuation were given by the user.

[0016] Or it is the copying machine managerial system characterized by coming to connect copying machine management equipment given in one of the above, and a copying machine given in one of the above.

[0017]

[Embodiment of the Invention] Hereafter, the copying machine managerial system which is the operation gestalt of this invention is explained.

[0018] Drawing 1 is structure of a system drawing of this operation gestalt.

[0019] It connects with the image output unit of a printer 31 possible [ a communication link ], and the body reader section 1 of a copying machine reads image information in a manuscript image, and transmits to a printer 31. CPU101 carries out multiple unit control of the whole copying machine which consists of the body reader section 1 of a copying machine, and a printer 31 based on the program stored in ROM103. RAM102 is the working area of CPU101.

[0020] Moreover, the body reader section 1 of a copying machine notifies that to copying machine management equipment 12, whenever it connects with copying machine management equipment 12 and a copy is performed. Moreover, in the case of a color copying machine, the mode (color mode or monochrome mode) in which copy actuation was performed is also notified simultaneously at copy management equipment. It is because the unit prices in the case of accounting count differ.

[0021] Moreover, a control unit 104 is constituted by various displays and two or more setting-out keys, such as LCD and LED, and can perform various actuation and setting out of a copying machine.

[0022] In addition, the copying machine reader section 1 can transmit the printing information transmitted through predetermined communication media from a personal computer or a workstation 5 to a printer 31, and can be made to print it by the printer 31.

[0023] In a printer 31, the DC controller 3100 controls the image formation section which is not illustrated. The DC controller 3100 has CPU3101, RAM3102, and ROM3103, and CPU3101 carries out multiple unit control of the whole printer based on DC controller control program of the predetermined version stored in ROM3103. RAM3102 is the working area of CPU3101.

[0024] It connects with a printer 31 and sorter 31a performs after treatment, such as

sorting application, to the record medium to which paper is delivered from a printer 31. Sorter 31a has CPU3197, RAM3198, and ROM3199, and CPU3197 carries out multiple unit control of the whole printer based on the control program of the predetermined version stored in ROM3199. RAM3198 is the working area of CPU3197.

[0025] Moreover, a printer 31 can equip with various accessories other than sorter 31a, and explains the case of a sorter with this configuration.

[0026] It connects with the body reader section 1 of a copying machine possible [ a communication link ] through predetermined communication media, and copying machine management equipment 12 manages the copying machine reader section 1. As a signal to manage, the signal which shows that actuation of a copy was performed, and the signal which shows the mode in that case are passed towards copying machine management equipment 12 from a copying machine, and the copy enable signal for making a copying machine usable is passed to a copying machine from copying machine management equipment 12 so that it may mention later.

[0027] It has CPU1203, RAM1204, and ROM1205, and, as for the management equipment section 1201, CPU1203 controls copying machine management equipment 12 based on the program stored in ROM1205. In addition, RAM1204 is the working area of CPU1203. A modem 1202 performs the communication link with the copying machine management equipment host computer 14 through a predetermined public line.

[0028] It is possible to connect a card reader 1210 to this copying machine management equipment 12 furthermore.

[0029] The copy output number-of-sheets management according to category is attained by inserting the card according to category which stored in this card reader 1210 the information for identifying the copying machine registered as one category etc. In this example, although a copying machine is explained as one set, two or more copying machines can be packed as one category, and it can also manage them. In that case, it will manage using the sum total of the copy counter value of two or more copying machines registered as a category, not using it of one copying machine as output number of sheets (copy counter value) in a category.

[0030] Moreover, when a manager inserts a maintenance card in a card reader 1210, setting out or discharge of the warning threshold of a copy counter, an activity upper limit, etc. mentioned later can be performed for each section. This may be beforehand stored in a maintenance card and you may make it setting out of it attained by inserting a maintenance card.

[0031] In addition, also in the actuation display 104 of the body of a copying machine, by inputting a personal identification number with a ten key etc., it becomes possible about the copy output for every category, and the copy output number-of-sheets management according to category is attained. When a manager inputs the personal identification number for managers in the case of this management method, the copy upper limit amount of money for each section can be set up (setting out of the prohibition on a copy, discharge).

[0032] Furthermore, copying machine management equipment 12 is equipped with the counter used as the foundation of accounting in RAM1204 for every mode, and whenever copy actuation is performed, it makes a counter value increase according to the copy mode and output number of sheets. If the connected copying machine is a color copying machine,

as the mode, it will have for example, monochrome mode and color mode, and output number of sheets will be counted according to the mode in which the copy was performed. Since what is necessary is just to perform accounting according to printing number of sheets if it is monochrome copying machine, a counter is good at one. These counters are reset by settlement of accounts of a tariff 0. In counting addition number of sheets, it adds to the counter which prepared this counter value separately in addition just before reset. [0033] Moreover, a counter value can be cleared by the manager to arbitration in the card for managers, or the personal identification number for managers as well as a warning threshold or a upper limit.

[0034] The copying machine management equipment host computer 14 can be equipped with the displays 1404, such as CPU1401, RAM1402, ROM1403, CRT, and LCD, and can display the various information transmitted from copying machine management equipment 12 on a display 1404.

[0035] CPU1401 can control the copying machine management equipment host computer 14 based on the program stored in ROM1403, and can display the receipt information from copying machine management equipment 12 on a display 1404. RAM1402 is the working area of CPU1401.

[0036] Next, actuation of copying machine management equipment 12 is explained.

[0037] If paper is delivered to the form by which image formation was carried out from the body of a copying machine as shown by the flow chart of drawing 2 when it copies to the card reader 1210 connected to copying machine management equipment 12 by inserting the managed card classified by category, or when it copies by inputting the personal identification number according to category, and changing into the condition which can be copied (2001), 1 \*\*\*\* of the counters of a corresponding category will be carried out (2002). Next, the value of said counter is compared with the upper limit set up more greatly than the warning threshold 1 and the warning threshold 2 which are mentioned later (2003). When a counter value is larger than a upper limit, a copy enable signal is dropped (2004) and the copy output in the body of a copying machine is made to become impossible. In addition, when there are two or more copying machines of the category which becomes an administration object, the counter value compared at step S2003 serves as the sum total of the counter value of the copying machine used as an administration object.

[0038] However, as long as all the copying machines registered as a category of an administration object are monochrome copying machines, this is sufficient, but when the color copying machine is intermingled, it cannot replace with a tariff with a counter value from a difference of the unit price of monochrome copy and a color copy simply. Therefore, if it is in the environment where a color copying machine is intermingled, black and white and the counter value of each color shall be multiplied by the weight according to a unit price, it shall be added, and it shall replace with a counter value. This value may be the amount of money itself charged. Moreover, it is determined, after upper limit number of sheets was not only specified but the threshold set as the comparative object also takes into consideration black and white and the weight according to the unit price of each color in this case. What is necessary is just to specify the amount of money from which a threshold also turns into a threshold, when the accounting amount of money is used as a counter value.

[0039] Moreover, a copy enable signal is dropped about all copying machines, when there are two or more copying machines managed as a category.

[0040] When a counter value is smaller than a upper limit, if it is larger than the warning threshold 1 in the value of a counter and counter values are two or more warning thresholds as compared with the warning threshold 2 smaller than an upper limit (2005), copying machine management equipment will send the 2nd advice which shows having exceeded the warning threshold 2 to all the bodies of a copying machine managed as a category (2006).

[0041] When a counter value is smaller than the warning threshold 2, a counter value is compared with the warning threshold 1 (2007), and if a counter value is larger than the warning threshold 1, copying machine management equipment 12 will send the 1st advice which shows having exceeded the warning threshold 1 to the body of a copying machine (2008).

[0042] If the copying machine under management was made into copy disabling when it was over the upper limit with the above procedure as compared with each threshold which was able to prepare a counter value or the accounting amount of money like the upper-limit > warning threshold 2 > warning threshold 1, and it is over the warning threshold 1 or 2, the advice corresponding to each will be sent to a copying machine.

[0043] The body of a copying machine which received the 1st or 2nd advice from copying machine management equipment 12 operates in the procedure of drawing 5. the 1st advice which shows that advice of a carrier beam was judged (501) and the warning threshold 1 was exceeded from copying machine management equipment 12 in the body 1 of a copying machine -- a carrier beam case -- the 1st advice -- a carrier beam -- the copy mode setting-out screen for the 1st warning which shows things, and the financial retrenchment beforehand set up at the time of next copy job setting out displays (502), and the copy mode recommends a user. For example, if the counter is already over the warning threshold 1 when a user does full color copy mode setting out as shown by drawing 3, a user will be urged to change into copy mode setting out of monochrome with a cheaper counter tariff.

[0044] If the advice which received from copying machine management equipment 12 is the 2nd advice which shows that the warning threshold 2 was exceeded, the copy mode setting-out screen for the 2nd warning which shows that the 2nd advice was received, and different financial retrenchment from the time of advice of the warning threshold 1 at the time of next copy job setting out set up beforehand will be displayed (503), and the copy mode will be recommended to a user. for example, it is shown by drawing 4 -- as -- a user -- two or more manuscripts, monochrome, and the number of \*\* -- if the counter is already over the warning threshold 2 when copy mode setting out of five sheets and a staple sort is carried out, 2 inch 1 mode which carries out the cutback layout of the two manuscripts as copy mode setting out at 1 page will be urged to a user that it changes into a user.

[0045] Although the copying machine which received the 1st or 2nd advice is performed about the display of each warning no matter it may be what copying machine, they differ about the copy mode to recommend according to the function with which each copying machine is equipped. For example, in the case of monochrome copying machine, such the mode cannot be recommended, although the content of recommendation as shown in drawing 3 and drawing 4 is sufficient as long as it is a color copying machine. Therefore,

recommendation mode is changed according to functions, such as recommending 2 inch 1 mode for the 1st advice after a carrier beam, and recommending 4 inch 1 mode which gives 2nd advice for the cutback layout of the four manuscripts after a carrier beam at 1 page. Or either the 1st warning or the 2nd warning is disregarded, and you may make it recommend the mode for cost reduction not in a three-stage but in two steps.

[0046] When a user inputs "yes" to the change in the mode to which it carried out like drawing 3 or drawing 4, and was urged by the procedure of drawing 5, copy mode is changed like the case where actuation of the usual mode change is performed.

[0047] To the output number of sheets copied as mentioned above or the amount of money charged, before reaching a upper limit with a upper limit, the threshold for giving warning to a user beforehand can be set up in two or more phases. When a counter value or the accounting amount of money exceeds this threshold, while displaying warning according to each phase with the copying machine of an administration object, he can be urged to change the mode into the copy mode for saving a tariff.

[0048] Consequently, it can know approaching the set-up upper limit (budget) beforehand by warning, and since the upper limit was exceeded, generating of the situation of a copy becoming impossible suddenly can be prevented.

[0049] Furthermore, by urging the change to the suitable copy mode for saving accounting, when the accounting amount of money approaches a budget, even if it approaches a budget upper limit, it can make the most of a copy over a long period of time.

[0050] In addition, in this operation gestalt, although the warning threshold is made into two kinds, the number of warning thresholds does not care about many from one kind or two kinds. Even if it is that case, when a manager inputs the card for managers, or the personal identification number for managers, a manager shall also set up the copy mode which shall set up the threshold of a finite individual separately and is recommended to a user with each warning threshold.

[0051]

[Effect of the Invention] If the set-up upper limit is approached in copy counter tariff management of a copying machine as explained above, the service which realizes copy financial retrenchment can be offered by recommending a user copy mode setting out which presses down a copy counter tariff with warning.

[0052] Furthermore, when there are two or more copying machines set as the object of the counter management by the upper limit, the above-mentioned service can be offered to all them.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the whole this invention block diagram.

[Drawing 2] It is the control flow chart of the copying machine management equipment by this invention.

[Drawing 3] It is drawing of the example of a display of the body of a copying machine at the time of reaching the warning threshold 1 of this invention.

[Drawing 4] It is drawing of the example of a display of the body of a copying machine at

the time of reaching the warning threshold 2 of this invention.

[Drawing 5] It is the control flow chart of a copying machine.